REMARKS

In response to the Final Office Action dated August 13, 2007, Applicants respectfully submit the present Amendment and Remarks, and reconsideration is respectfully requested.

Amendment to Claims

Claim 42 has been added to further define the claimed invention. Support for claim 42 can be found in claim 33. Specifically, claim 42 is essentially the same as claim 33; it recites claim 33 in an independent form. If claim 42 is found allowable, Applicants will cancel claim 33. No new matter has been added.

No new matter has been added. Hence, Applicants respectfully request consideration and entry of these claims.

Claimed Invention

The present invention, as claimed, recites a substrate based on paper fibers of the non-woven type obtained by a dry method comprising a thermoplastic binder and an antimicrobial agent. Specifically, the claimed invention is directed to a substrate based on paper fibres of a non-woven type, obtained by a dry method which comprises (1) a thermoplastic binder enabling the fibres to bind together; and (2) an antimicrobial agent selected from the group consisting of zinc, silver and copper gluconates. The antimicrobial agent being present in the substrate at a concentration between 0.01 and 10% by weight, thereby conferring antimicrobial properties to the substrate.

Summary of the Office Action

In the Office Action dated August 13, 2007, the Examiner rejected claims 32-33 and 37-41 under 35 U.S.C. §103(a) for being obvious over Sine

et al. (USPN 6,183,766). In addition, the Examiner rejected claims 36 under 35 U.S.C. §103(a) for being obvious over Sine et al. (USPN 6,183,766) in view of Bundo et al (U.S. Patent Application Publication No. 2003/0099828).

RESPONSE

Rejections of Claims 32-35 and 37-41 under 35 USC §103(a)

In the Office Action, the Examiner claims 32-33 and 37-41 under 35 U.S.C. §103(a) for being obvious over Sine et al. (USPN 6,183,766). The Examiner alleges that Thanan et al. (U.S. Patent No. 4,891,277), which is recited in the Sine et al. document and is incorporated therein, disclose a substrate that may be a nonwoven fiber and used as a sanitary article, baby article, and hand wipe. The Examiner also alleges that Beerse (WO 98/55080 A2), which is also recited in the Sine et al. document and is incorporated therein, disclose "an antimicrobial agent being present in an antimicrobial composition in a range of 0.5-2% ('080, Page 4, paragraph 5) that overlaps a range disclosed by applicant (0.05-1% by weight of antimicrobial agent) for the same weight basis (i.e., weight % by weight of antimicrobial agent) and Sine by reference to Thaman [et al.] meets all of the claim limitations of claim 32." Therefore, the Examiner concludes that the weight % of the antimicrobial agent by weight of the substrate of claim 32 "is considered inherent property of sine by reference to Thaman [et al.] and Beerse [et al.] and the claimed invention." Applicants respectfully traverse.

As discussed above, the present invention, as claimed, is directed to a substrate based on paper fibres of a non-woven type, obtained by a dry method which comprises (1) a thermoplastic binder enabling the fibres to bind together; and (2) an antimicrobial agent selected from the group consisting of zinc, silver and copper gluconates. The antimicrobial agent being present in

the substrate at a concentration between 0.01 and 10% by weight, thereby conferring antimicrobial properties to the substrate.

Applicants respectfully point out that there is nothing in the Sine et al. document that teaches or suggests the claims of the present invention. The Sine et al. document discloses compositions for sanitizing and moisturizing skin surface. These compositions include (1) an essential constituent which is an alcohol antiseptic intended to kill or reduce the growth of micro-organisms; (2) a number of essential components which are recited in the passage entitled "essential components" from column 2 line 40 to column 8 line 36 of the Sine et al. document; and (3) a number of optional components from column 8 line 37 to column 16 line 32.

The Sine et al. document emphasis that the **essential component** of the composition is **an alcohol antiseptic, which is preferably ethanol, in the amount of 40% to 99%**.

In contrast, the amount of the antimicrobial agent of claimed invention is a concentration between 0.01 and 10% by weight.

As for the "other essential components" of the compositions of Sine et al, they are present in the composition in the amount of from about 0.1% to about 20% of a lipophilic skin moisturizing agent/emollient. A further essential constituent of the composition is a degreasing agent.

Although the Sine et al. document discloses that the composition may also comprise antimicrobial agents which may be metallic salts such as zinc or copper (see column 12, lines 37-4) and which may be at concentrations comprised between 0.001 and 5%, Applicants respectfully point out that zinc gluconate as cited in the Sine et al. document, among other additional constituents of the composition, as a component intended to control odors

(see column 9, line 59 and column 10, lines 6 and 7 of Sine et al.). Although these constituents are comprised in the composition at concentrations between 0.1 and 10%, they are intended to control odors instead of having antimicrobial properties as claimed in the present invention.

Applicants respectfully reiterate that even if zinc gluconate is cited among the optional constituents of Sine composition, it is not at all as an antiseptic agent but as an optional constituent intended to fight against bad odours (see column 10 lines 4 to 40 of Sine et al.)

Applicants respectfully point out that at columns 16-17, Sine et al. disclose that their compositions may also be incorporated into insoluble substrates intended to be applied to skin, and **not** to a substrate based on paper fibres of none-woven type as claimed in the present invention. (The passage at columns 16-17 of Sine et al. cites to US Patent No. 4,891,227 (Thaman et al.) which is by reference therein and is cited by the Examiner.) Applicants also respectfully point out that Thaman et al. relates to medicated cleansing pads which may comprise two or more layers of non-woven materials, and thus neither teaches nor discloses a substrate based on paper fibres of none-woven type exhibiting antimicrobial properties as claimed in the present invention.

In addition, Applicants respectfully point out that although that Sine et al. (US 6,183,766) describes a composition which may comprise zinc gluconate (see column 10 line 25) and which may be incorporated into an insoluble substrate such as those described in US Patent No. 4,891,227 to Thaman et al. (see column 7 lines 33), there is nothing in either in the Sine et al. document (US Patent No. 6,183,766) or in the Thaman et al. document (US Patent No. 4,891,227) which teaches or suggests the quantity of zinc

gluconate to be incorporated into the composition and the quantity of composition to be incorporated into the substrate, so that the final concentration of zinc gluconate in the substrate be sufficient to confer to said substrate antimicrobial properties as claimed in the present invention.

As for the Beerse et al. document, this document is directed to leave-on antimicrobial compositions. Page 3, paragraph 4 of the Beerse et al. document defines "leave-on antimicrobial compositions" to mean leave-on antimicrobial application to human skin for the purpose of controlling growth and viability of transient bacterial on the skin, such as treating acne (see page 3, paragraph 5 of the Beerse et al. document).

There is nothing in the Beerse et al. document that teaches or suggests the quantity of zinc gluconate to be incorporated into the composition and the quantity of composition to be incorporated into a substrate, so that the final concentration of zinc gluconate in the substrate be sufficient to confer to said substrate antimicrobial properties as claimed in the present invention.

At most the Beerse et a. document is cited in the Sine et al. document to illustrate a concentration in antiseptic, that is to say in alcohol to be introduced in the substrate but, certainly not a teaching concerning the content in gluconate which is not at all used as an antiseptic by Sine et al. but only as an optional constituent of the composition.

Consequently, Applicants respectfully point out that it is erroneous for the Examiner to assert that because that Beerse et al. disclose a range of antiseptic component which may overlap the range which is recited in claim 33 of the present application anticipates by inherence or at least suggests the present invention.

There is no teaching or suggestion in the Beerse et al. document concerning the quantity of composition to be incorporated into a substrate, let alone a substrate based on paper fibres of a non-woven type, obtained by a dry method which comprises (1) a thermoplastic binder enabling the fibres to bind together; and (2) an antimicrobial agent selected from the group consisting of zinc, silver and copper gluconates, wherein the antimicrobial agent being present in the substrate at a concentration between 0.01 and 10% by weight, thereby conferring antimicrobial properties to the substrate.

One in the art would not be motivated to modify the concentration of the antimicrobial compositions of Beerse et al. and combine it to the teaching of using an alcohol to make the quantity of composition to be incorporated into a substrate, let alone a substrate based on paper fibres of a non-woven type, obtained by a dry method which comprises (1) a thermoplastic binder enabling the fibres to bind together; and (2) an antimicrobial agent selected from the group consisting of zinc, silver and copper gluconates, wherein the antimicrobial agent being present in the substrate at a concentration between 0.01 and 10% by weight, thereby conferring antimicrobial properties to the substrate.

Applicants respectfully point out that although that Sine et al. describes a composition which may comprise zinc gluconate (see column 10 line 25), there is nothing in either in the Sine et al. document or in the Beerse et al. document which teaches or suggests the quantity of zinc gluconate to be incorporated into the composition and the quantity of composition to be incorporated into the substrate, so that the final concentration of zinc

gluconate in the substrate be sufficient to confer to said substrate antimicrobial properties as claimed in the present invention.

Applicants respectfully reiterate that although the Sine et al. document discloses compositions that may include antimicrobial properties; however, these antimicrobial properties are linked to the presence of an essential component which is an alcohol antiseptic and when zinc gluconate is used. Sine et al. teach that zinc gluconate is used only as an optional constituent of the composition intended for controlling odors.

As for the antibacterial agent of Sine et al., it is **an alcohol** and **not a metal gluconate**. Sine et al. disclose that their antimicrobial agent is an alcohol used in very high proportions (44%-99%); and due to the high proportion of alcohol, their zinc gluconate cannot possibly have its own antibacterial effect, especially when it only exits in the amount of 0.1% to 10%.

In view of the above, Applicants respectfully submit that at most, Sine et al. disclose that the concentration of zinc gluconate is the range of concentration of said component (or other components which are cited) in the composition. Sine et al. do not teach or suggest anything concerning the quantity of composition to be incorporated into a substrate, let alone a substrate based on paper fibres of a non-woven type, obtained by a dry method which comprises (1) a thermoplastic binder enabling the fibres to bind together; and (2) an antimicrobial agent selected from the group consisting of zinc, silver and copper gluconates, wherein the antimicrobial agent being present in the substrate at a concentration between 0.01 and 10% by weight, thereby conferring antimicrobial properties to the substrate.

Applicants respectfully point out that the teaching of Sine et al. alone or combine with Thaman et al., as well with Beerse et al. do not teach or suggest the quantity of gluconate which is to be presented in the final impregnated substrate so that the substrate would have antimicrobial properties linked to the presence of the gluconate as claimed in the present invention. Neither Sine et al. nor Thaman et al. nor Beerse et al. teach or suggests that the use of an antimicrobial agent of the claimed invention, let alone its concentration in a substrate based on paper fibres as claimed in the present invention.

Applicants respectafully submit that even if the composition according to Sine et al., may contain up to 10% of gluconate, there is nothing in that document or in Thaman et al. document or the Beerse et al. document that could suggest to those skilled in the art the quantity of the composition to be incorporated into the substrate in order to have in the final product an efficient quantity of zinc gluconate to enable the gluconate to have an antimicrobial effect per se, the effect being not at all sought by Sine et al. since according to Sine et al. the antimicrobial property is linked to the presence of the essential component which is an alcohol antiseptic.

In view of the above, Applicants respectfully request reconsideration and withdrawal of these rejections.

Rejections of Claims 32-35 and 37-41 under 35 USC §103(a)

In addition, the Examiner rejected claims 36 under 35 U.S.C. §103(a) for being obvious over Sine et al. (USPN 6,183,766) in view of Bundo et al (U.S. Patent Application Publication No. 2003/0099828).

Although the Examiner acknowledges that "Sine [et al.] by reference to Thaman [et al. do] not teach a thermoplastic binder that is ethylene vinyl acetate copolymer. The Examiner alleges that this deficiencies is

compensated by the Bundo et al. because Bundo et al. teach "a multilayer substrate comprising an antimicrobial. Bundo [et al. teach] that either a styrene-butadiene resin binder or ethylene vinyl acetate copolymer binder can be used." Hence, the Examiner concludes that "since Bundo [et al. teach] that the two are equivalents and teaches a device which seeks to solve a similar problem in the art, it would have been obvious to one of ordinary skill in the art to modify to article taught by Sine [et al.] by reference to Thaman [et al.] such that the binder comprises ethylene vinyl acetate copolymer with a reasonable expectation of success." Applicants respectfully traverse.

Applicants respectfully submit that although the Bundo et al. document is directed to a multilayer substrate, there is nothing in the Bundo et al. document that teaches or discloses a substrate obtained by a dry method comprising an antimicrobial agent, et alone a substrate based on paper fibres of a non-woven type, obtained by a dry method which comprises (1) a thermoplastic binder enabling the fibres to bind together; and (2) an antimicrobial agent selected from the group consisting of zinc, silver and copper gluconates, wherein the antimicrobial agent being present in the substrate at a concentration between 0.01 and 10% by weight, thereby conferring antimicrobial properties to the substrate.

Hence, one of ordinary skill in the art would not have been motivated to combine the teaching of Bundo et al. with the teaching of Sine et al. alone or together with Thaman et al. to make the claimed invention.

As discussed above, Sine et al. emphasis that the essential component of the composition is an alcohol antiseptic, which is preferably ethanol, in the amount of 40% to 99%. In contrast, the amount of the antimicrobial agent of claimed invention is a concentration between 0.01 and 10% by weight.

Although Sine et al. disclose that the composition may also comprise antimicrobial agents which may be metallic salts such as zinc or copper (see column 12, lines 37-4) and which may be at concentrations comprised between 0.001 and 5%, zinc gluconate as cited in the Sine et al. document is component intended to control odors (see column 9, line 59 and column 10, lines 6 and 7 of Sine et al.). Although zinc gluconate is recited in the Sine et al. document in the composition at concentrations between 0.1 and 10%, it is intended to control odors instead of having antimicrobial properties as claimed in the present invention. Applicants respectfully reiterate that even if zinc gluconate is cited among the optional constituents of Sine composition, it is not at all as an antiseptic agent but as an optional constituent intended to fight against bad odours (see column 10 lines 4 to 40 of Sine et al.)

Applicants also respectfully point out that Thaman et al. relates to medicated cleansing pads which may comprise two or more layers of non-woven materials, and thus neither teaches nor discloses a substrate based on paper fibres of none-woven type exhibiting antimicrobial properties as claimed in the present invention.

In addition, Applicants respectfully point out that although that Sine et al. describe a composition which may comprise zinc gluconate (see column 10 line 25) and which may be incorporated into an insoluble substrate such as those described in the Thaman et al. document (see column 7 lines 33 and the following), there is nothing in either in the Sine et al. document or in the Thaman et al. document that teaches or suggests the quantity of zinc gluconate to be incorporated into the composition and the quantity of composition to be incorporated into the substrate, so that the final

concentration of zinc gluconate in the substrate be sufficient to confer to said substrate antimicrobial properties as claimed in the present invention.

Applicants respectfully point out that the teaching of Sine et al. alone or combine with Thaman et al., as well with Bundo et al. do not teach or suggest the quantity of gluconate which is to be presented in the final impregnated substrate so that the substrate would have antimicrobial properties linked to the presence of the gluconate as claimed in the present invention. Neither Sine et al. nor Thaman et al. nor Bundo et al. teach or suggests that the use of an antimicrobial agent of the claimed invention, let alone its concentration in a substrate based on paper fibres as claimed in the present invention.

Applicants respectafully submit that even if the composition according to Sine et al., may contain up to 10% of gluconate, there is nothing in that document or in Thaman et al. document or the Bundo et al. document that could suggest to those skilled in the art the quantity of the composition to be incorporated into the substrate in order to have in the final product an efficient quantity of zinc gluconate to enable the gluconate to have an antimicrobial effect per se, the effect being not at all sought by Sine et al. since according to Sine et al. the antimicrobial property is linked to the presence of the essential component which is an alcohol antiseptic.

In view of the above, Applicants respectfully request reconsideration and withdrawal of these rejections.

CONCLUSION

In light of the foregoing amendments and remarks, Applicants respectfully submit that the application is now in condition for allowance. Should any minor matter remain, or should the Examiner feel that an interview would expedite the prosecution of this application; the Examiner is invited to call the undersigned at his convenience.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

By: /Jessica H. Bui/
Jessica H. Bui
Registration No. 40,846

1300 North 17th Street
Suite 1800
Arlington, VA 22209
(703) 312-6600 (telephone)
(703) 312-6666 (facsimile)

JHB